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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,320	08/30/2001	Travis Swanson	MIC-17	8733

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EXAMINER

CHOI, WOO H

ART UNIT	PAPER NUMBER
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2189

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/943,320	Applicant(s) SWANSON, TRAVIS	
	Examiner Woo H. Choi	Art Unit 2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 8-11, 13-15, 17, 23-37 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The parent claim claims, for each pin of a subset of pins, a “selectable functionality” that includes two functions, chip select function and a clock function. The dependent claims however, limit the “selectable functionality” to just one function, making the scope of these claims unclear. The Examiner also notes that if only one function is available for selection, the functionality is no longer selectable.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1, 2, 4, 6 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Ajanovic (US Patent No. 6,298,426).

5. With respect to claims 1, Ajanovic discloses a method of configuring a memory controller (figure 2, 104), said memory controller having a plurality of input/output pins (see also figure 4) said method comprising:

informing said memory controller of a type of memory (figure 4B, CFGAB, col. 4, lines 16 – 22, 55 – 58, col. 5, lines 41 – 42, col. 7, lines 18 – 22, the CKE signal, which depends on the type of memory, controls the CFGAB signal which in turn selects the multiplexed signal to output); and

configuring at least one of said pins to have a functionality in accordance with said type of memory (figure 4B, 402B) , wherein functionalities selectable for said configuring include a chip select function (RAS7-7/CS7-6) and a clock function (figure 4A, CKE, the Examiner notes that the claim does not require that both listed functions be available for selection to a single pin and the pins corresponding to the CKE function is selected for the CKE function in the configuration shown in figure 4).

6. With respect to claims 2, the type of memory is buffered memory (figure 5).

7. With respect to claim 4, said configuring comprises configuring said functionality of said pin to a clock function (figure 4A, CKE pin is configured to provide a clock enable function).

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8. With respect to claim 6, said configuring comprises configuring said functionality of said pin to a chip select function (figure 4B, 104)

9. With respect to claim 7, said functionality of said pin is one of chip select signal (figure 4B, 104) and a clock signal.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Mehta *et al.* (US Patent No. 6,681,301, hereinafter “Mehta”).

Mehta discloses a method of configuring a memory controller, said memory controller having a plurality of input/output pins said method comprising:

informing said memory controller of a type of memory (col. 2, lines 52 – 55); and

configuring at least one of said pins to have a functionality in accordance with said type of memory (figures 2 and 3, 241), wherein functionalities selectable for said configuring include a clock function (figure 3, 500, DM0/DQS9, data strobe or data mask function),

wherein the type of memory is unbuffered memory (col. 8, lines 4 – 5).

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However, Mehta does not specifically disclose a pin with a chip select function. On the other hand it is well known in the art of memory that most memory chips have chip select input pin and that a chip selection functionality is provided by a memory controller (see Ajanovic for evidence of skill level at the time of invention). It would have been obvious to one skilled in the art at the time of invention to provide a pin with a chip select functionality in a memory controller to be able to perform memory operations in a memory system comprising multiple memory chips. Chip select function is used to select memory chips for memory operations.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mehta in view of Gillingham *et al.* (US Patent Application No. 2001/0047450, hereinafter "Gillingham").

Mehta discloses all of the limitation of the parent claim as discussed above. However, Mehta does not specifically disclose that the clock signal is a differential clock signal. On the other hand, Gillingham discloses a memory system that uses a differential clock signal (page 6, paragraph 79).

It would have been obvious to one of ordinary skill in the art, having the teachings of Gillingham and Mehta before him at the time the invention was made, to use the differential clock signal teachings of the memory system of Gillingham in the memory system of Mehta, in order to eliminate sensitivity of the clock path to a reference voltage variations and common mode noise throughout the system (Gillingham, page 6, paragraph 79).

Allowable Subject Matter

13. Claims 8 – 11, 13 – 15, 17 and 23 – 37 are allowed.

The following is an examiner's statement of reasons for allowance:

When combined with all of the other limitations of the claims, prior art of record does not teach or suggest selecting a chip select function or a clock function for a single pin where both functions are available for selection for the same pin.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Woo H. Choi whose telephone number is (571) 272-4179. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Woo H. Choi

July 27, 2005